

Date: Fri, 11 Nov 94 04:30:30 PST
From: Ham-Digital Mailing List and Newsgroup <ham-digital@ucsd.edu>
Errors-To: Ham-Digital-Errors@UCSD.Edu
Reply-To: Ham-Digital@UCSD.Edu
Precedence: List
Subject: Ham-Digital Digest V94 #376
To: Ham-Digital

Ham-Digital Digest Fri, 11 Nov 94 Volume 94 : Issue 376

Today's Topics:

 Good terminal program for packet???
 MacHams/Gallery's BBS
 Packet and Braodcasting
 Packet group?
 packet tnc's?
 Packet via Soundblaster???
 Pen Pal Wanted for Packet vs. email Test
 pk88 & windows question
 Pulsed BPSK hoax?(???) (2 msgs)
 TM-733A / KPC-9612 Help!!!
 Windows Software for KAM+

Send Replies or notes for publication to: <Ham-Digital@UCSD.Edu>
Send subscription requests to: <Ham-Digital-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Digital Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-digital".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 10 Nov 94 19:35:58 GMT
From: dkelly@nebula.tbe.COM (david kelly)
Subject: Good terminal program for packet???

Joe Showalter asks:

> I just want a good terminal program for my kpc-3.
> Right now I'm using procomm plus on a 286 but I don't have buffers or any
> other frills.
> Let me know of a good program and where to ftp it and I'll be happy :)

I use VersaTerm-PRO for packet, telephone modem, telnet, and ftp. But it is

Ray Mack
WD5IFS
mack@mails.imed.com

Date: 11 Nov 1994 01:15:36 GMT
From: jtb4@aber.ac.uk
Subject: Packet group?

In article <784272083.68snx@agape.sol.net>, smp@agape.sol.net (Steven M. Palm) says:

>
>
>What is the name of the packet radio newsgroup? I thought there
>was one, rec.radio.amateur.packet, but it has no articles here.
>Is this it?

>
Yes I to noticedthat there was a lack of articlesi there!

>I just built a Baycom type modem this weekend, and am trying to test
>it out, and am looking for some english docs for some software, and
>some general pointers to get me going in the right direction. :)
>
>73 de N9YTY

>
>
With the docs, well there are somefloating about here,but the translator said that they were copyright!, this is sort of ture, I think the early version of baycom that first came was shareware and had english docs with them, so you need to find someone with an early version!!, The later versions of Baycom are copyrighted, this I know! As the german gents sometime ago was talking about taking people to court (Shareware vendors etc) who were giving away this software, I don't know what is happening know though I do know people with the baycom, and I'm sure you will get lots out of this part of the hobby.

73's de James GW4CDH

Date: 9 Nov 1994 21:47:00 -0700
From: srbarnet@nyx.cs.du.edu (Scott Barnett)
Subject: packet tnc's?

Hi everyone,

I am new to packet radio and am looking at purchasing a TNC. I am currently considering either the Kantronics KPC3, the AEA PK-12, or the MFJ 1270C. Any comments on these ones, or any others would be appreciated.

I will be using it with a Cushcraft Ringo Ranger AR270 2M/440 roof mounted antenna, a Realistic HTX-202 2M FM HT (w/ plans to eventually get a dual band radio), and either a 386sx/25 or a 486DX2/66. Please send all replys to my email address: srbarnet@nyx.cs.du.edu

73 de Scott Barnett N30FO

--

Scott R. Barnett	srbarnet@nyx.cs.du.edu
Investment Accountant	Scott.R.Barnett@cyber.widener.edu
PFPC, Inc.	HAM Radio - N30FO

All opinions expressed or implied are my own and no one else's!!!

Date: Thu, 10 Nov 1994 15:26:39 GMT
From: don@grc.genroco.com (Don Woelz)
Subject: Packet via Soundblaster???

Does anyone know of software that will allow one to use a Soundblaster card on a PC to send and receive packet? I'm not even sure if this can be done, but suspect it is possible. I would think it would be something on the order of the Baycom stuff.

Donald D. Woelz, K9GR	Office Phone: 414-644-8700
GENROCO, Inc.	K9GR @WB9TYT.#MKE.WI.USA.NOAM
205 Kettle Moraine Drive North	k9gr@k9gr.ampr.org [44.92.1.48]
Slinger, WI 53086 U.S.A.	don@genroco.com

Date: Thu, 10 Nov 1994 10:34:13 +0000
From: tgold@microvst.demon.co.uk ("Anthony R. Gold")
Subject: Pen Pal Wanted for Packet vs. email Test

Hi,

I recently registered at a packet/internet gateway and tried it out. The messages which I dispatched via email arrived at the packet stations, but their appearance has been altered. All blank lines had been filtered out somewhere along the way.

The gateway operator says he had not seen that before and guessed that is was something that AMSAT was doing. Anyone know whether this is a feature, a bug or even something happening somewhere else in the path?

Anyway, may I send the test message to others OUTSIDE the UK and receive back a report on how the test message arrives.

This is the original test message I sent out:

Test starts here:

This is Tony's keyboard:

```
`  !  @  #  $  %  ^  &  *  (  )  _  +  
~  1  2  3  4  5  6  7  8  9  0  -  =  
  
  q  w  e  r  t  y  u  i  o  p  [  ]  
  Q  W  E  R  T  Y  U  I  O  P  {  }  
  
  a  s  d  f  g  h  j  k  l  ;  '  \  
  A  S  D  F  G  H  J  K  L  :  "  |  
  
 \  z  x  c  v  b  n  m  ,  .  /  
 |  Z  X  C  V  B  N  M  <  >  ?
```

That's all there were.

--

Tony - G3SKR / AA2PM / tgold@microvst.demon.co.uk
End of my packet test.

Now here is the body of what was received. The received packet message was indeed far longer as the routing information appended at the head was far longer than the message itself!

Packet message as was receive by 2 amateurs in the UK:

This is Tony's keyboard:

```
`  !  @  #  $  %  ^  &  *  (  )  _  +  
~  1  2  3  4  5  6  7  8  9  0  -  =  
  
  q  w  e  r  t  y  u  i  o  p  [  ]  
  Q  W  E  R  T  Y  U  I  O  P  {  }  
  
  a  s  d  f  g  h  j  k  l  ;  '  \  
  A  S  D  F  G  H  J  K  L  :  "  |  
  
 \  z  x  c  v  b  n  m  ,  .  /  
 |  Z  X  C  V  B  N  M  <  >  ?
```

That's all there were.

Tony

G3SKR & AA2PM

```
+-----+
| *** Message via SATGATE through Amateur Packet satellites. *** |
| AMSAT needs your help to keep the satellite service operating. |
| Check your BBS files for info on AMSAT or REQFIL the file      |
|           C:\GB7LAN\AMSAT.DOC from GB7LAN.                     |
+-----+
```

If any-one will help, please post or email your packet address. Then when you get the packet message, simply email me whether the message was intact or compressed of blank lines. If anything else odd happened, forwarding it back via email would save trying to describe the results.

Thanks for any help.

73.

Tony Gold

G3SKR & AA2PM

Date: 9 Nov 1994 23:20:19 -0500
From: chuckorl@aol.com (ChuckORL)
Subject: pk88 & windows question

In article <39hqr8\$n5k@krel.iea.com>, wayneb@comtch.iea.com (Wayne Barnhart) writes:

Take a look at PacketPeT Lite For Windows. This is a shareware / demo version of the commerical packet windows program PacketPeT For Windows, and supports many TNCs including the PK88. It is available on CIS in the Hamnet, on Genie int Radio-Electronics sig, and on AOL in the Ham club.

73 Chuck
Chuck Harrington Software, Inc.
PacketPeT For Windows

Date: Thu, 10 Nov 1994 15:22:41 GMT

From: zlau@arrl.org (Zack Lau (KH6CP))
Subject: Pulsed BPSK hoax?(???)

System Bartender kb8uox (matt@plab.dml1.cornell.edu) wrote:

: Ok, this seems physically feasible... but his performance claims for
: the circuit, namely 19.2kbit/s in < 3kHz bandwidth, seem fishy at
: best. The attempt at a theoretical explanation fails outright, and
: the experimental data is IMHO inconclusive at best. Thus my questions

Claude Shannon's famous theory showed that as you narrowed the bandwidth for a given data rate, you needed a better carrier to noise ratio. Thus, there isn't a theoretical limitation on how much data you can stuff through a noiseless channel, though there obviously is for real channels.

Unfortunately, his theorem only indicates limits--it doesn't offer a clue as to how you can achieve them.

Practically, it is tough to get 40 dB signal to noise ratio over many of the radio channels used by amateurs. 60 dB is nearly impossible.

--

Zack Lau KH6CP/1 2 way QRP WAS
 8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

Date: 10 Nov 1994 22:24:25 GMT
From: karn@unix.ka9q.ampr.org (Phil Karn)
Subject: Pulsed BPSK hoax?(???)

I just came up with an another analysis of K6HH's scheme that shows that even his bandwidth claim is bogus.

You can model his "narrow shift" BPSK as the sum of an ordinary antipodal (0/180 degree) BPSK signal plus a much stronger unmodulated carrier component that is in quadrature (90 degrees) to both BPSK phases. In his case, the amplitude ("voltage") of the carrier is approximately $1/.01=100$ times that of the BPSK component. That's a carrier/information power ratio of 10000:1 or 40 dB, with all of that carrier power going to waste because it doesn't carry any information. This means a 40 dB power loss vs ordinary BPSK, which is the same result I got last night.

It's obvious that the bandwidth required by the tiny BPSK signal is not reduced at all by the addition of the strong carrier component. It still requires 2 Hz per bit per second, as for standard BPSK. But

look at how the FCC defines "bandwidth" in 97.3(a)(8):

"The width of a frequency band outside of which the mean power of the total emission is attenuated at least 26dB below the mean power of the total emission, including allowances for transmitter drift or Doppler shift."

By this definition, K6HH can claim that his system has *zero* bandwidth, because all of his sideband energy (the only information-carrying part) is 40 dB down from his useless carrier-on-steroids. That puts all of the sidebands outside of the FCC-defined bandwidth. All that's left is the carrier, which has zero bandwidth and carries zero information. The sidebands don't count in the bandwidth measurement, even though they're still absolutely necessary to demodulate the signal.

Again, this is a pretty good example of why minimizing transmitter *power* is so much more important than bandwidth. Not only should the FCC get rid of bandwidth limits in favor of automatic power control, there should also be an upper limit on the Eb/N0 that may be required by any particular modulation technique. This will avoid the gratuitous interference that could otherwise be caused by using a highly power-inefficient modulation method and cranking up the wick to compensate.

Phil

Date: 10 Nov 1994 05:59:30 GMT
From: csetzer@rmii.com (Craig Setzer)
Subject: TM-733A / KPC-9612 Help!!!

Is there anyone who has the Kenwood TM-733A and the Kamtronics KPC-9612? I have some problems...

1) The KPC-9612 XCD (external carrier detect) pin requires a ground to indicate carrier, yet the TM-733A SQC (squellch control output) pin sends +5 Volts on open squellch (carrier) and 0 Volts on closed squellch (no carrier). So the KPC only transmits when there is data coming in... which is backwards.

2) When the KPC is in software mode (ignores XCD and SQC) I can only pick up the strongest stations (S8+) and then only part time.

Is there someone who is running this radio and TNC who is not having problems, please email me at csetzer@rmii.com

Thanks,

Craig

--

Craig Setzer

Internet: csetzer@rmii.com

HAM Radio: KB0MXQ

--You'll find me in the bear's cage...

Date: 9 Nov 1994 23:10:21 -0500

From: chuckorl@aol.com (ChuckORL)

Subject: Windows Software for KAM+

Check out the program 'PacketPeT Lite For Windows'. This is a shareware / demo version of a commercial Windows program that supports the KAM and KPC3, along with a variety of other packet TNCS. It is a product with many improvements under development for the future, although it has been on the market for about a year now. The shareware version can be found on AOL in the ham club, Compuserve in the HAMNET, and Genie in the Radio-Electronics section. I do not know if it is at an internet location or not.

73 Chuck

Chuck Harrington Software, Inc.

PacketPeT For Windows!

Date: 10 Nov 1994 21:56:05 GMT

From: karn@unix.ka9q.ampr.org (Phil Karn)

References<CyzAwp.GA4@srngenprp.sr.hp.com> <39sbsd\$k0l@qualcomm.com>,
<Cz1zKD.802@mv.mv.com>

Subject: Re: Pulsed BPSK hoax(???)

I've been asked for a more complete citation for the Costas paper.

It's "Poisson, Shannon and the Radio Amateur", and it first appeared in the December 1959 (!) issue of Proceedings of the I.R.E. It was reprinted as the first paper in the 1993 IEEE book "Multiple Access Communications: Foundations for Emerging Technologies", edited by Norman Abramson, ISBN 0-87942-292-0.

Here's the abstract. --Phil

Summary - Congested band operation as found in the amateur service presents an interesting problem in analysis which can only be solved by statistical methods. Consideration is given to the relative merits of two currently popular modulation techniques, SSB and DSB. It is found that in spite of the bandwidth economy of SSB this system can claim no over-all advantage with respect to DSB for this service. It is further shown that there are definite advantages to the use of very broadband techniques in the amateur service.

The results obtained from the analysis of the radio amateur service are significant, for they challenge the intuitively obvious and universally accepted thesis that congestion in the radio frequency spectrum can only be relieved by the use of progressively smaller transmission bandwidths obtained by appropriate coding and modulation techniques. In order to study the general problem of spectrum utilization, some basic results of information theory are required. Some of the significant work of Shannon is reviewed with special emphasis on his channel capacity formula. It is shown that this famous formula, in spite of its deep philosophical significance, cannot be used meaningfully in the analysis and design of practical, present day communications systems. A more suitable channel capacity formula is derived for the practical case.

The analytical results thus obtained are used to show that broadband techniques have definite merit for both civil and military applications. Furthermore, such techniques will result in far more efficient spectrum utilization in many applications than any practical narrow-band, frequency- channelized approach. Thus broad-band techniques can, in many cases, increase the number of available "channels". With regard to military communications it is shown that the ability of a communication system to resist jamming varies in direct proportion to the transmission bandwidth for a given data rate. Thus narrow-band techniques lead progressively to more expensive communications equipment and less expensive jammers. It is concluded that in the military field broad-band techniques are not only desirable but also often mandatory.

End of Ham-Digital Digest V94 #376
